Research Proposal

Develop an interactive learning environment (ILE) with software and with specialised hardware designed to support teaching and learning in education. The interaction in the system can be between the learner and the system, the teacher and the system, or between teachers and learners with each other using the system.

To measure the effectiveness of Deep Learning (DL) algorithms among learners for the purpose of interaction and collaboration as compared to traditional learning model.

To explore how Artificial intelligence with DL algorithms in Education can trigger teacher's to be creative and innovative in order to improve student's success.

Analysing career path of a student influenced by a number of factors, including the family profession, parents and neighbours,student behaviour and reactions.

To predict the learning outcomes of the students.

Objectives

Focus on developing Intelligent learning platform with Deep Learning approaches to educational data mining.

Platform to manage learning and development activities; provide automatic assessment/grading system and feedback to the students.

To detect student undesirable behaviours and grouping them, constructing course material, planning and scheduling.

Generating recommendations of learning items to assist students.

Automatic evaluation of essay and short answers.

Scope

Developing an E-Learning System to manage all activities in teaching learning process.

Platform will record when the student access those data, how many times they accessed, taking test, watching video and providing automatic grading of system with high accuracy and less time.

Literature Survey

Jabeen Sultana,Nasreen Sultana "Prediction of Sentiment Analysis on Educational Data based on Deep Learning Approach"

- proposes a model based on Deep Learning approach to perform sentiment analysis on educational data.

Sushil Shrestha, Manish Pokharel “Machine Learning algorithm in educational data”

- proposes a model based on machine learning algorithms to group students with similar characteristics to understand learners behaviour.

Nabila Khodeir “Student Modelling Using Educational Data Mining Techinques”

- applies machine learning, data mining and statistical techniques to different data to set educational settings.
- modelling of student learning style, prediction of student performance, Profiling, Grouping students and Collaboration analysis is done.

Bo Guo, Rui Zhang,Guang Xu “Predicting Student Performance in Educational Data Mining ”

- predicting student performance using using Deep Learning techniques .

Summary of the Literature

Understanding the different Deep Learning algorithms with neural network architecture.

Clustering algorithm to group students of similar behaviour.

Prediction algorithm to predicit the performance of students.

Collaborative filtering algorithm for recommendation.

DL based automatic grading model

Novelty in Research

Applying Deep Learning Approaches in Educational Data Mining with high accuracy than existing Artificial Intelligence Algorithms.

Implementing Career Predicition Algorithm to analyse the career path of a student.

Other Informations

With respect to the performance of DL techniques in these works, leaving aside the papers that do not offer a comparison between DL and traditional machine learning techniques, 67% of the works reported that DL outperformed the existing baselines, 27% showed inconclusive results (DL performed better only in some of the experiments), and only 6% reported a lower performance of DL techniques.

References

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